INTEROPERABILITY

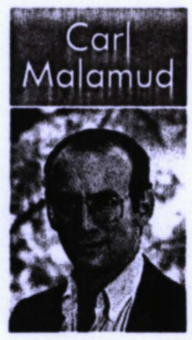
E-mail: The Building Block of the Global Network

Paris—Pascal Renaud is an MIS manager for ORSTOM, a national French laboratory with offices in 41 locations. The catch is where those locations are.

ORSTOM is a research institution that has offices in places like Ouagadougou, Dakar and Niamey in West Africa, not to mention locations in remote South Pacific islands, South America and Asia.

ORSTOM works on issues such as control of malaria, development of water resources, and other important developmental issues. Communication is a key requirement for this group. Field offices need to communicate on a regular basis with their peers in France and other locations. Renaud has developed a network based on the Unix to Unix Copy Program (UUCP), a series of programs included in many versions of the Unix operating system.

UUCP is old technology, and forms the basis for store-and-forward services such as mail and the Usenet distributed bulletin board system. On top of UUCP, ORSTOM uses simple electronic mail. A preprocessor allows French users to include accent characters, and other programs are used to encode binary files from Macintosh and PC systems.



Some countries in the ORSTOM network have X.25 networks. In those cases, a simplified version of UUCP (known as the G protocol) is used over 2,400-bit-per-second, X.25 lines. The local X.25 networks then gateway to Transpac, the French X.25 network, to reach the main ORSTOM hub in Montpellier.

Other countries don't have X.25, and ORSTOM is forced to rely on simple dial-up calls to Montpellier. Once or twice a day, a call is placed and mail is transferred.

Why isn't the system based on TCP/IP? Within France, ORSTOM connects to the French Internet using TCP/IP. Over a 2,400- or 1,200-bps line, however, running TCP/IP, with the overhead of the protocol stack, doesn't make sense.

In other words, there are still times when very basic protocols such as UUCP play a role. These protocols provide basic connectivity and E-mail service. ORSTOM plays a key role in networking in the locations it serves. It has a policy allowing guest accounts and thus is helping to spread E-mail to where it is needed most.

Some feel that E-mail is technology overkill in impoverished countries. I would argue that exactly the opposite is true.

Phone calls are difficult to place in many of the ORSTOM countries. Service is unreliable, it takes a long time to place calls, and they are often abruptly terminated. Many clinics, universities, research groups, United Nations agencies and others are isolated, far from their peers.

In places like this, E-mail is vital technology. It allows a professional to communicate with peers located throughout the world.

Indeed, much of the most important work in building the global network is being done by people like Pascal Renaud. Simple, effective technology is being used to save lives.

CARL MALAMUD's next book is Exploring the Internet: A Technical Travelogue, *which will be published by Prentice Hall and will be featured at Interop '92 Fall. The opinions expressed here are his own.*

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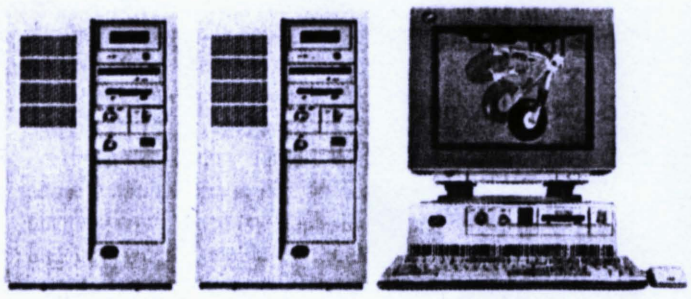

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